

INSTALLATION INSTRUCTIONS
Z-Flex
Double Wall Direct Vent Kit

Keep these instructions with the boiler at all times
for future reference

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Be Aware of Hazard Definitions

Danger

Denotes presence of a hazard which, if ignored, will result in severe personal injury, death or property damage

Warning

Denotes presence of a hazard which, if ignored could result in severe personal injury, death or substantial property damage.

Caution

Denotes the presence of a hazard, which if ignored, could result in minor personal injury or property damage

Notice

Intended to bring attention to information, but not related to personal injury or property damage.

Danger

This equipment must be installed, adjusted, serviced and started only by a qualified service agency – an individual or agency, licensed and experienced with all codes and ordinances, and who is responsible for the installation and adjustment of the equipment. The installation must comply with all local codes and ordinances and with the latest revision of the National Fire Protection Standard for Oil Burning Equipment, NFPA 31.

Read all instructions before proceeding. Follow all instructions completely. Failure to follow these instructions could result in equipment malfunction causing severe personal injury, death or substantial property damage.

Do not alter this vent kit or the boiler in any way. The manufacturer will not be liable for any damage resulting from changes made in the field to the boiler or its components or from improper installation. Failure to comply could result in severe personal injury, death, or substantial property damage.

Your oil fired boiler is designed to burn No. 1 and No. 2 heating oil only. Never use gasoline or a mixture of gasoline and oil.

Do not store gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

The area around the boiler should be kept free and clear of combustible materials.

Never burn garbage or refuse in your boiler.

Never try to ignite oil by tossing burning papers or other material into your boiler.

Do not attempt to start the burner when excess oil has accumulated or the boiler is full of vapors.

Do not operate boiler if the heat exchanger is damaged.

Do not jumper, attempt to bypass or override any of the safety limit controls.

Do not use this boiler if any part has been under water. Immediately call a qualified service technician to inspect the boiler and replace any part of the boiler, control system or burner that has been under water.

All installations must conform to the requirements of the authority having jurisdiction. Such applicable requirements take precedence over the general instructions of this manual.

Where required by the authority having jurisdiction, the installation must conform to the American Society of Mechanical Engineers Safety Code for Controls and Safety Devices for Automatically Fired Boilers, ANSI/ASME CSD-1.

Notice

Concealed Damage- If you discover damage to the burner, boiler or controls during unpacking, notify the carrier at once and file the appropriate claim. When calling or writing about the boiler please have the following information available: The boiler model number and serial number.

Installation Clearances

Warning Boilers in rooms shall be installed with the clearances from combustible materials not less than indicated below. Combustible materials are those made of or surfaced with wood, compressed paper, plant fibers, plastics, or other material that will ignite and burn, whether flame proofed or not, or whether plastered or not.

The boiler must not be installed on combustible flooring. The boiler is approved for installation on non combustible flooring only. The boiler must not be installed on carpeting or vinyl flooring

Minimum clearances to combustible construction are as follows:

TOP-24 IN.

FRONT-12 IN.

FLUE CONNECTOR DOUBLE WALL DIRECT VENT PIPING – 2”

REAR-2 IN.

SIDES-2 IN.

Consult NFPA-31 for construction techniques where the above minimum clearances cannot be obtained. Recommended clearances for servicing can be found in the boiler manual.

VENTING

Warning Failure to follow all instructions can result in flue gas spillage and carbon monoxide emissions, causing severe personal injury or death. All installations must meet the requirements of NFPA 31. Use only the ETL listed venting system components supplied with the packaged boiler. All vent connections must be properly sealed with the high temperature sealant.

Caution External vent surfaces are hot. Surface discoloration of the building may occur due to improper burner or boiler adjustment. We will not accept any liability for such discoloration. Follow all instructions which are included with your specific direct vent kit.

Vent Location

1. The preferred location of venting system is on the opposite wall of the known prevailing winds.
2. The exit terminal of the system must conform to the following guidelines. See Figure 1.
 - a. The vent terminal shall not be less than 3 feet above any forced air inlet to the house.
 - b. The vent terminal shall not be less than 4 feet below, 4 feet horizontally, or 1 foot above any door, window or gravity inlet into the building.
 - c. The vent terminal shall be installed at least 1 foot above the finished grade. The vent must be maintained to keep the location 1 foot above any solid surface including snow, ice and landscape materials. **The vent shall not be installed in a window well or any other natural or fabricated depression.**
 - d. The vent terminal shall not be less than 2 feet from an adjacent building.
 - e. The vent terminal shall not be less than 7 feet above grade when located adjacent to public walkways.
 - f. The vent terminal shall not be located so that flue gasses are directed to jeopardize people or overheat combustible structures, materials or enter buildings.
 - g. All joints in the vent system are to be sealed with Permatex high temperature sealer or equivalent to prevent the leakage of products of combustion into the building.

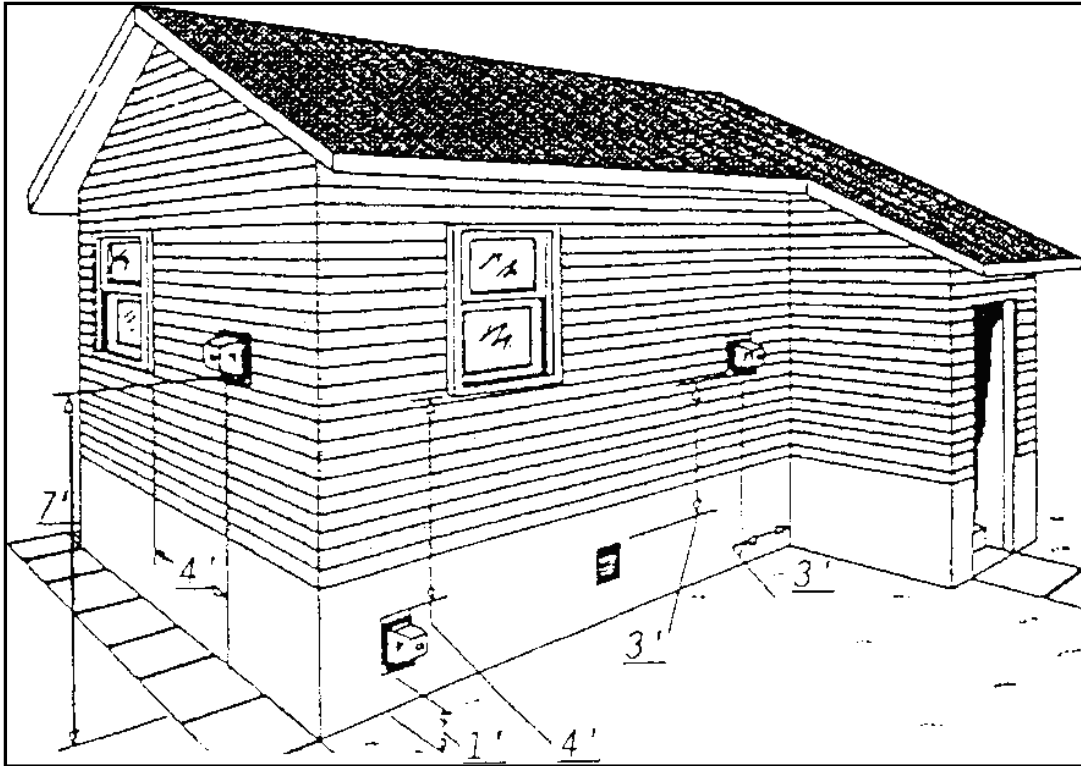


Figure 1

Vent Kit Components

- (1) TV-175 vent termination
- (1) 10 or 15 length of 5" double wall insulated flexible stainless vent piping 12" minimum bend radius
- (1) Stainless appliance adapter 6" to 5"
- (1) 4" Air intake piping
- (2) 4" Air intake piping clamps
- (1) 4" 90 Deg. galvanized elbow,
- (1) Field Controls VRV-4, 4" Vacuum Relief Valve
- (1) Tube of high temperature sealant

Vent Installation

1. After determining the proper location for the vent hood, cut an opening in the exterior wall $\frac{1}{4}$ " larger than the vent termination end itself or approximately $7\frac{1}{4}$ " square.
2. Install the Z-Flex flexible piping into the vent connector.
 - a. Straighten the flex vent piping so that it can be easily installed into the termination hood adapter.
 - b. Make sure that both the 5" stainless flex vent pipe and the aluminum insulating flex pipe are cut squarely. The outer aluminum pipe must be cut so that the inner stainless pipe is protruding 2" beyond the outer pipe. See Figure 2.
 - c. Apply a generous bead of high temperature caulking into the pocket of the termination hood adapter and on to the inner stainless vent pipe. See Figure 2 and Figure 3.
 - d. Tighten the both clamps of the termination adapter to secure the vent pipe to the termination hood. See figure 4.

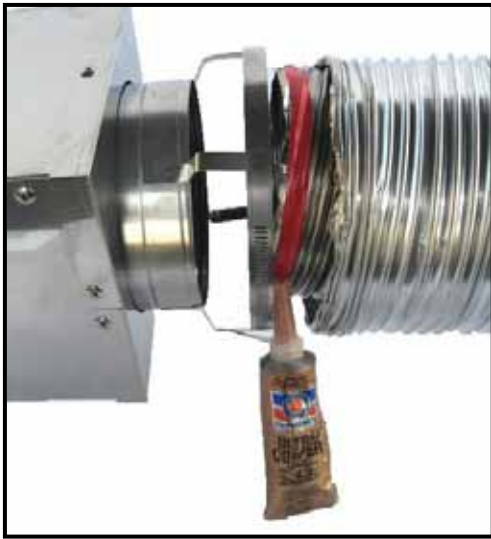


Figure 2



Figure 3

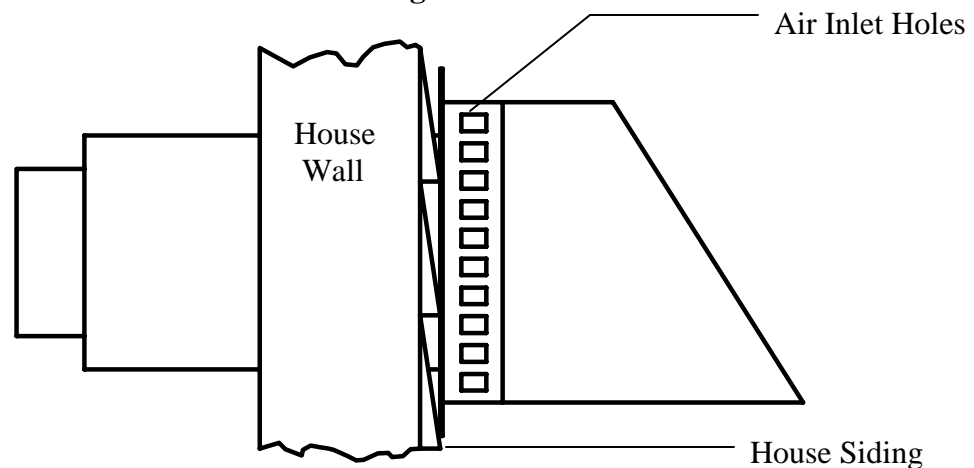


Figure 4



Figure 5.

3. Install the vent termination hood to the house exterior.
 - a. Apply a bead of silicone caulking around the perimeter of the vent termination end.
 - b. Attach the termination to the outside of the house by screwing through the holes provided in the vent termination flange. **The termination hood must be attached to the exterior of the siding to allow for proper intake air to the boiler as shown below. Do not block the air intake holes located along the side of the vent hood.**



4. Install the appliance connector into the flexible vent piping.
 - a) Cut the flex vent to the required length. Be sure that both the outer flex and the inner stainless flex are squarely cut and the same length. See Figure 5.
 - b) Loosen the gear clamps attached to the adapter sleeve.
 - c) Apply liberal bead of high temperature sealant around the corrugated end of the adapter.
 - d) Align the flat seams at the end of both corrugated tubes and insert the adapter into the vent tube. Screw the adapter into the vent pipe with a counterclockwise motion. The adapter should be fully threaded into the inner tube up to the Permatex seal on the adapter and is tight. If the adapter does not adequately screw into the vent pipe, unscrew it, apply additional high temperature sealant and try again.
 - e) Tighten the gear clamp for the outer flex.

5. Attach the optional 6"-90° Stainless elbow to the boiler flue outlet.
 - a) Apply sealant around the boiler flue outlet.
 - b) Slide the 6"-90° stainless elbow over the flue outlet.
 - c) Tighten the gear clamp of the 6"-90° stainless elbow around the flue outlet.
 - d) For additional support screw the elbow to the flue outlet using self drilling screws.

6. Attach the vent pipe to the boiler flue outlet or the optional 90° stainless elbow.
 - a) Apply sealant around the boiler flue outlet or the optional 6"-90° stainless elbow.
 - b) Slide the appliance adapter over the boiler flue outlet. Be sure to orient the test port location in the adapter so that it is accessible for burner combustion testing.
 - c) Tighten the gear clamp of the appliance adapter around the flue outlet or the optional 6"-90° stainless
 - d) Seal the seam in the appliance adapter with high temperature sealant.

7. Support the vent pipe from sagging.
 - a) Steel strapping or other noncombustible supports must be used to prevent sagging of the vent pipe. The pipe must be supported at intervals no greater than 36 inches.

8. Install the combustion air intake piping.
 - a) Install the air inlet collar to the vent hood using the four screws and washers supplied. A bead of high temperature silicone caulking is to be placed between the collar and the vent hood to ensure proper seal. See Figure 6.
 - b) Install the burner air inlet adapter supplied with the burner. Refer to the burner manufacturer's manual for specific instructions.
 - c) Install the 4" 90 Deg. Galvanized elbow to the burner adapter.
 - d) Install the Field Vacuum Relief Valve on to the 4" 90 Deg. galvanized elbow. The purpose of the damper is to act as a vacuum breaker in the event of a blockage in the air intake. NOTE: The balance weight of the vacuum relief valve must be installed in a level position and adjusted to lightly close while burner is operating. Be sure to lock the balancing weight after adjustment.
 - e) Attach the 4" flexible air intake pipe to both the TV175 termination and the Field Vacuum Relief Valve. All joints in the air intake assembly must be securely fastened and the system securely supported

9. Follow all instructions in the boiler manual for proper start up and adjustment of the burner.

10. Upon start up verify that all of the vent connections are tight and properly sealed preventing the escape of flue gasses into the boiler room.

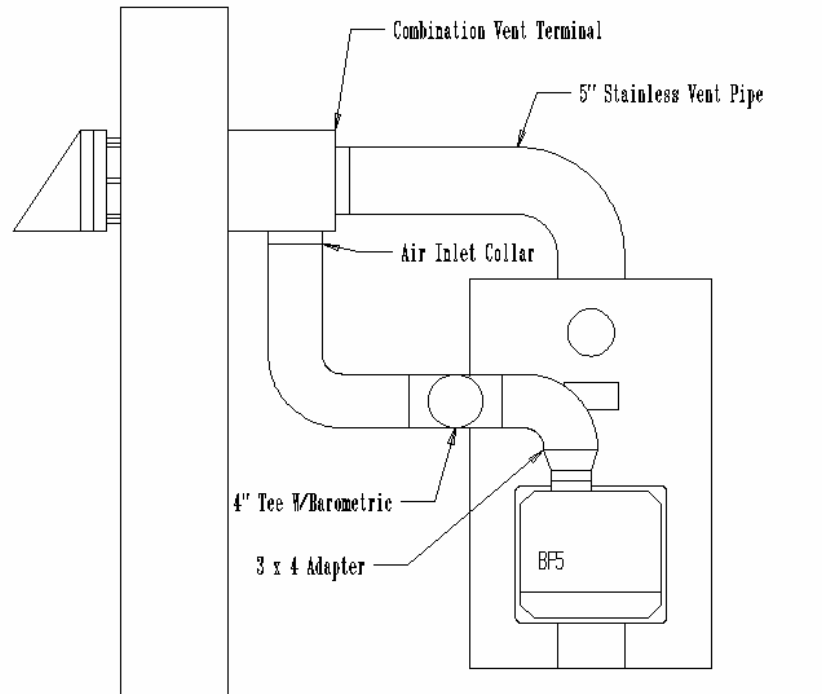


Figure 6

DIRECT VENT OIL BURNERS

Riello Burners - All Riello direct vent burners are shipped with the nozzle for the 3 section boiler installed. A separate nozzle is included in the burner carton for the 4 section and 5 section boilers. See the burner set up page for the appropriate burner settings.

Boilers supplied with Riello burners will also be supplied with a 3" to 4" galvanized adapter.

The adapter is to be fastened directly to the flange opening on the burner cover using three sheet metal screws.

The Riello BF5 burners for use with direct vent systems are shipped with the controls, which provide pre and post purge. Pre purge is provided to ensure clean starts under all conditions. Post purge is provided to ensure that the boiler fires at maximum efficiency and dependability throughout the heating season. Post purge timing is variable. The factory set post purge timing should be set at approximately 45 seconds. **Post purge times in excess of 60 seconds will cause the Honeywell Aquastat to lock out on an error code.**

Beckett Burners - Boilers supplied with the Beckett NX burner are supplied with an inlet air adapter which must be installed in place of the inlet air louvers. Refer to the Beckett NX burner manual.

Beckett NX burners for use with direct vent systems are shipped with the controls, which provide pre and post purge. Pre purge is provided to ensure clean starts under all conditions. Post purge is provided to ensure that the boiler fires at maximum efficiency and dependability throughout the heating season.

Post purge of the oil burner is controlled through the electronic circuitry supplied on the oil burner primary control. The factory set post purge timing is at approximately one minute.

